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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/663,628 | 09/16/2003 | Philip Chu Wah Yip | 076574.003 | 1928 |
| 42640 7590 02/13/2007 DILLON & YUDELL LLP 8911 NORTH CAPITAL OF TEXAS HWY SUITE 2110 AUSTIN, TX 78759 | | | EXAMINER | |
| | | | TORRES, JUAN A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2611 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE | | |
| 3 MONTHS | 02/13/2007 | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/663,628 | YIP ET AL. | |
| | Examiner | Art Unit | |
| | Juan A. Torres | 2611 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 16 September 2003.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-18 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-18 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 03 November 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to because: in figure 2 the single line connection (---) between blocks 24 and 25 and the multiple bit line connection (---/- -) between block 25 and block 22 are missing (see original set of drawings). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

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The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because exceed 150 words.

Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities:

a) in page 8 line 8 the recitation "AT commands" is improper, because the acronym AT has not been presented before; it is suggested to be changed to "attention commands (AT commands)".

b) In page 9 line 22 the recitation " $w_n(k+1) = w(k) + 0.1 / \delta(r_k) * e(k) * r(k-n)$ " seems to be improper because w(k) has not been defined, and it is not clear if r(k) and r(k-n) are in the numerator or in the denominator; it is suggested to be changed to

$$w_n(k+1) = w_n(k) + \frac{0.1}{\delta(r_k)} * e(k) * r(k-n).$$

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 7-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claim 7, claim 7 is rejected because it claims a computer program product comprised by computer code is by definition non-statutory subject of matter.

As per claims 8-12, they are rejected because they depend directly from claim 7, and claim is rejected.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by the ITU-T V.29 (11/88) Recommendation ("9600 bits per second modem standardized for use on point-to-point 4-wire leased telephone-type circuits", 1988).

As per claims 1 and 7, V.29 discloses training a receiving modem comprising performing segment 1 training by waiting for silence for a first set of symbol intervals (section 8 pages 7-8, table 5/V.29); performing segment 2 training by sending a plurality of alternating AB symbols for a second set of symbol intervals (section 8 pages 7-8, table 5/V.29); performing segment 3 training by sending a plurality of CD symbols for a third set of symbol intervals to generate a plurality of coefficients for an adaptive equalizer within said receiving modem (section 8 pages 7-8, table 5/V.29); and performing segment 4 training by sending a plurality of scrambled binary "1" symbols for a fourth set of symbol intervals to adjust said plurality of coefficients of said adaptive equalizer within said receiving modem (section 8 pages 7-8, table 5/V.29).

As per claims 2 and 8, V.29 discloses claims 1 and 7, V.29 also discloses that the first set of symbol intervals includes 48 symbol intervals (section 8 pages 7-8, table 5/V.29).

As per claims 3 and 9, V.29 discloses claims 1 and 7, V.29 also discloses that the second set of symbol intervals includes 64 symbol intervals (section 8 pages 7-8, table 5/V.29, in the V.29 the second segment has 128 symbol intervals, that includes 64 symbol intervals).

As per claims 4 and 10, V.29 discloses claims 1 and 7, V.29 also discloses that the third set of symbol intervals includes 64 symbol intervals (section 8 pages 7-8, table 5/V.29, in the V.29 the third segment has 384 symbol intervals, that includes 64 symbol intervals).

As per claims 5 and 11, V.29 discloses claims 1 and 7, V.29 also discloses that the fourth set of symbol intervals includes 48 symbol intervals (section 8 pages 7-8, table 5/V.29).

As per claims 6 and 12, V.29 discloses claims 1 and 7, V.29 also discloses that performing segment 4 training further includes concurrently verifying a plurality of estimated symbols generated from a subset of said plurality of scrambled binary 1 symbols (section 8 pages 7-8, table 5/V.29).

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Yaguchi (US 5337332 A).

As per claims 1 and 7 Yaguchi discloses training a receiving modem comprising performing segment 1 training by waiting for silence for a first set of symbol intervals

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(column 1 line 39 to column 2 line 11 and table 2); performing segment 2 training by sending a plurality of alternating AB symbols for a second set of symbol intervals (column 1 line 39 to column 2 line 11 and table 2); performing segment 3 training by sending a plurality of CD symbols for a third set of symbol intervals to generate a plurality of coefficients for an adaptive equalizer within said receiving modem (column 1 line 39 to column 2 line 11 and table 2); and performing segment 4 training by sending a plurality of scrambled binary "1" symbols for a fourth set of symbol intervals to adjust said plurality of coefficients of said adaptive equalizer within said receiving modem (column 1 line 39 to column 2 line 11 and table 2).

As per claims 2 and 8, Yaguchi discloses claims 1 and 7, Yaguchi also discloses that the first set of symbol intervals includes 48 symbol intervals (column 1 line 39 to column 2 line 11 and table 2).

As per claims 3 and 9, Yaguchi discloses claims 1 and 7, Yaguchi also discloses that the second set of symbol intervals includes 64 symbol intervals (column 1 line 39 to column 2 line 11 and table 2, the second segment has 128 symbol intervals, that includes 64 symbol intervals).

As per claims 4 and 10, Yaguchi discloses claims 1 and 7, Yaguchi also discloses that the third set of symbol intervals includes 64 symbol intervals (column 1 line 39 to column 2 line 11 and table 2 the third segment has 384 symbol intervals, that includes 64 symbol intervals).

As per claims 5 and 11, Yaguchi discloses claims 1 and 7, Yaguchi also discloses that the fourth set of symbol intervals includes 48 symbol intervals (column 1 line 39 to column 2 line 11 and table 2).

As per claims 6 and 12, Yaguchi discloses claims 1 and 7, Yaguchi also discloses that performing segment 4 training further includes concurrently verifying a plurality of estimated symbols generated from a subset of said plurality of scrambled binary 1 symbols (column 1 line 39 to column 2 line 11 and table 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the ITU-T V.29 (11/88) Recommendation ("9600 bits per second modem standardized for use on point-to-point 4-wire leased telephone-type circuits", 1988) in view of Dupuis (US 6304597 B1).

As per claim 13, V.29 discloses training a receiving modem comprising performing segment 1 training by waiting for silence for a first set of symbol intervals (section 8 pages 7-8, table 5/V.29); performing segment 2 training by sending a plurality of alternating AB symbols for a second set of symbol intervals (section 8 pages 7-8, table 5/V.29); performing segment 3 training by sending a plurality of CD symbols for a third set of symbol intervals to generate a plurality of coefficients for an adaptive

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equalizer within said receiving modem (section 8 pages 7-8, table 5/V.29); and performing segment 4 training by sending a plurality of scrambled binary "1" symbols for a fourth set of symbol intervals to adjust said plurality of coefficients of said adaptive equalizer within said receiving modem (section 8 pages 7-8, table 5/V.29). The V.29 doesn't disclose the means for waiting and the means for receiving. Dupuis discloses means for waiting and the means for receiving in a standard modem implementation structure (figure 1B column 4 line 27 to column 5 line 36). V.29 and Dupuis teachings are analogous art because they are from the same field of endeavor of data communication over the telephone network. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the V.29 modem disclosed by the V.29 recommendation in the modem architecture disclosed by Dupuis. The suggestion/motivation for doing so would have been to make a standard implementation of the V.29 modem (Dupuis abstract).

As per claim 14, V.29 and Dupuis disclose claim 13, V.29 also discloses that the first set of symbol intervals includes 48 symbol intervals (section 8 pages 7-8, table 5/V.29).

As per claim 15, V.29 and Dupuis disclose claim 13, V.29 also discloses that the second set of symbol intervals includes 64 symbol intervals (section 8 pages 7-8, table 5/V.29, in the V.29 the second segment has 128 symbol intervals, that includes 64 symbol intervals).

As per claim 16, V.29 and Dupuis disclose claim 13, V.29 also discloses that the third set of symbol intervals includes 64 symbol intervals (section 8 pages 7-8, table

5/V.29, in the V.29 the third segment has 384 symbol intervals, that includes 64 symbol intervals).

As per claim 17, V.29 and Dupuis disclose claim 13, V.29 also discloses that the fourth set of symbol intervals includes 48 symbol intervals (section 8 pages 7-8, table 5/V.29).

As per claim 18, V.29 and Dupuis disclose claim 13, V.29 also discloses that performing segment 4 training further includes concurrently verifying a plurality of estimated symbols generated from a subset of said plurality of scrambled binary 1 symbols (section 8 pages 7-8, table 5/V.29).

Conclusion

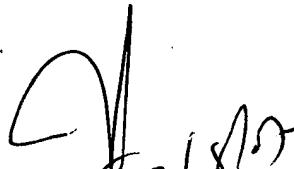
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hypercom ("FastPOS: High-Speed Modem Technology for Transaction Terminals", 1998) discloses a fast training that takes around 100 ms.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is (571) 272-3119. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres
10-24-2006



TEMESGHEW GHEBRETIINSAE
PRIMARY EXAMINER
[Handwritten initials/initials]